Corbett maths

Simplifying Algebraic Fractions

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Examples

Workout

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Question 1: Simplify the following algebraic fractions

(a) $\frac{42xyz}{56}$ (b) $\frac{45ab}{60abc}$ (c) $\frac{16mn}{18n}$ (d) $\frac{40x^2y}{32xy}$

(e) $\frac{17cf}{34c^3}$ (f) $\frac{8x^4}{2x^2}$ (g) $\frac{33a^2b^2}{44a^3b}$ (h) $\frac{12x^3}{20x^7}$

Question 2: Simplify the following algebraic fractions

(a) $\frac{6x + 8}{2}$ (b) $\frac{9x - 12}{3}$ (c) $\frac{35x^2 + 20}{5}$

(d) $\frac{7m - 70n^3}{7}$ (e) $\frac{10c + 25}{15}$ (f) $\frac{8w + 2 - 4x}{12}$

(g) $\frac{9x^2 + 12x + 33}{6}$ (h) $\frac{3x^2 + 5x}{x}$ (i) $\frac{3x^3 - 7x^2}{x}$

(j) $\frac{8x^6 + x^4 + 3x}{x}$ (k) $\frac{10x^7 + 15x^5 - 30x^4}{5x}$ (l) $\frac{3c^6 - 15c^4}{6c}$

(m) $\frac{-8x^5 - 12x^4 + 2x^3}{-4x}$ (n) $\frac{6c^9 - 12c^3}{3c^2}$ (o) $\frac{6c^6 + 2c^2}{4c^4}$

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Question 3: Simplify the following algebraic fractions

(a) $\frac{(x + 6)(x + 3)}{(x + 3)}$

(b) $\frac{(x - 1)(x + 1)}{(x - 1)}$

(c) $\frac{(x - 3)}{(x - 4)(x - 3)}$

(d) $\frac{(x + 7)^2}{(x + 7)}$

(e) $\frac{(x - 3)(x + 2)}{(x + 2)(x + 9)}$

(f) $\frac{(x + 2)(x + 4)^2}{(x + 4)}$

(g) $\frac{(x + 1)(x + 2)(x + 3)}{(x + 2)(x + 3)(x + 4)}$

(h) $\frac{x(x + 3)^2}{x(x + 1)(x + 3)}$

Question 4: Simplify the following algebraic fractions

(a) $\frac{x^2 + 5x + 4}{x^2 + 4x + 3}$

(b) $\frac{x^2 + 6x + 9}{x^2 - 2x - 15}$

(c) $\frac{x^2 - 2x}{x^2 + 2x - 8}$

(d) $\frac{x^2 - 7x + 10}{x^2 + 3x - 10}$

(e) $\frac{x^2 + 8x + 15}{x^2 - x - 12}$

(f) $\frac{x^2 + 13x + 40}{x^2 + 14x + 48}$

(g) $\frac{x^2 - 2x - 8}{x^2 + 6x - 40}$

(h) $\frac{x^2 + 10x + 24}{x^2 - 36}$

(i) $\frac{x^2 + 4x - 45}{x^2 + 10x + 9}$

(j) $\frac{x^2 + 11x}{x^2 - 121}$

(k) $\frac{x^2 - 1}{x^2 + x}$

(l) $\frac{x^2 - 15x + 44}{x^2 - 16}$

(m) $\frac{x^2 - x - 6}{x^2 - 2x - 3}$

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Question 5: Simplify the following algebraic fractions

(a) $\dfrac{3x^2 + 7x + 4}{x^2 + 3x + 2}$

(b) $\dfrac{x^2 - 2x - 8}{3x^2 + 7x + 2}$

(c) $\dfrac{5x^2 - 13x - 6}{x^2 - 9}$

(d) $\dfrac{2x^2 + 3x - 2}{2x^2 - 15x + 7}$

(e) $\dfrac{9x^2 - 1}{3x^2 - 13x + 4}$

(f) $\dfrac{x^2 + 17x + 70}{5x^2 + 38x + 21}$

(g) $\dfrac{3x^2 + 5x - 12}{12x^2 - 19x + 4}$

(h) $\dfrac{3x^2 + 11x + 6}{9x^2 + 21x + 10}$

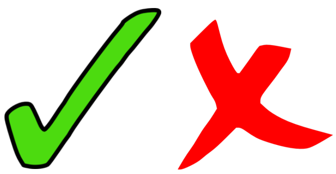
(i) $\dfrac{4x^2 + x - 3}{4x^2 + 9x + 5}$

(j) $\dfrac{9x^2 - 30x + 25}{6x^2 + 5x - 25}$

(k) $\dfrac{10x^2 - 23x + 12}{4x^2 + 4x - 15}$

(l) $\dfrac{20x^2 + 21x + 4}{16x^2 - 1}$

Answers



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